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10/532,673	04/26/2005	Michihiko Takase	2005_0642A	8711

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EXAMINER	
BURKHART, ELIZABETH A	

ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,673	TAKASE ET AL.	
	Examiner	Art Unit	
	Elizabeth Burkhart	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/7/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 21 and 27 are pending in the application. Amended claim 27 and cancelled claim 28 have been noted. The amendment filed 8/21/2009 has been entered and carefully considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (JP 11-080952) in view of Okuyama et al (JP 2001-243886), Kawakusu et al (JP 2000-277009), and Furuya (JP 09-295894).

Shintani teaches a process for forming an MgO film onto a substrate of an AC type plasma display panel [0002] comprising: controlling a vacuum degree in the deposition room within a certain range, introducing oxygen into the deposition room, and controlling a partial pressure of the oxygen gas introduced to said deposition room within a certain range (Abstract). The oxygen partial pressure is kept within a certain range by controlling an amount of oxygen introduced into the deposition room while the deposition room is exhausted [0004].

Shintani does not teach introducing another gas including at least one gas selected from the group consisting of water vapor, hydrogen, carbon monoxide, and

carbon dioxide; the partial pressure of the oxygen gas; or the partial pressure of the another gas.

Okuyama teaches a method for forming an MgO film on a plasma display panel (Abstract) wherein hydrogen may be introduced during deposition in order to control crystal orientation and the introduction of oxygen reduces oxygen deficiency in the MgO film [0025].

Kawakusu teaches a method for forming an MgO film onto a substrate of an AC type plasma display panel while keeping the oxygen partial pressure within a range of $1x10^{-5}$-$1x10^{-4}$ Torr ($1.33x10^{-3}$-$1.33x10^{-2}$ Pa) (Abstract).

Furuya teaches a method for forming an MgO film onto a plasma display panel wherein hydrogen is introduced to the chamber in order to obtain an MgO film of high grade. Hydrogen may be introduced at a partial pressure of 1 x 10^-3 torr to 1 x 10^-4 torr (1.33x10^-2 Pa - 1.33x10^-1 Pa) (Abstract, [0005]).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to incorporate hydrogen as suggested by Okuyama and Furuya into the process of Shintani in order to form a film of high grade and control crystal orientation of the film while reducing oxygen deficiency. Also, it would have been obvious to maintain the oxygen partial pressure of Shintani within the specific range suggested by Kawakusu since this range would have reasonably been expected to be suitable for deposition of an MgO film on AC type plasma display panels.

Regarding Claim 27, Shintani teaches an apparatus for depositing an MgO film for manufacturing a plasma display panel, the apparatus comprising: a deposition room,

a gas introducing means for introducing oxygen gas (nozzle), an exhausting means (pressure control valve), a partial pressure detecting means for detecting partial pressure of the oxygen gas (mass spectrometer), a vacuum degree detecting means (vacuum meter), and a controlling means for controlling the amount of oxygen gas introduced to said deposition room (mass flow controller) and for controlling the amount of exhausting gas (pressure computing unit) based on information from the partial pressure detecting means and vacuum degree detecting means [0002], [0004]-[0006]. It is inherent that the oxygen gas of Shintani suppresses oxygen deficiency in the MgO film as evidenced by [0025] of Okuyama et al (JP 2001-243886). It would have been obvious to one of ordinary skill to incorporate other MFC's into the apparatus of Shintani to accomodate gases other than oxygen, such as those suggested by Okuyama and Furuya, in order to improve the quality of the MgO film and to independently detect the partial pressure of each gas since Furuya teaches maintaining the additional gas (hydrogen) within a specific partial pressure range and the MFC of Shintani is suitable for maintaining a specific partial pressure of gas as shown with oxygen.

Thus, claims 21 and 27 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Shintani, Okuyama, Kawakusu, and Furuya.

3. Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (JP 11-080952) in view of Okuyama et al (JP 2001-243886), Kawakusu et al (JP 2000-277009), and Shiokawa et al (US 2003/0077972).

Shintani teaches a process for forming an MgO film onto a substrate of an AC type plasma display panel [0002] comprising: controlling a vacuum degree in the

deposition room within a certain range, introducing oxygen into the deposition room, and controlling a partial pressure of the oxygen gas introduced to said deposition room within a certain range (Abstract). The oxygen partial pressure is kept within a certain range by controlling an amount of oxygen introduced into the deposition room while the deposition room is exhausted [0004].

Shintani does not teach introducing another gas including at least one gas selected from the group consisting of water vapor, hydrogen, carbon monoxide, and carbon dioxide; the partial pressure of the oxygen gas; or the partial pressure of the another gas.

Okuyama teaches a method for forming an MgO film on a plasma display panel (Abstract) wherein hydrogen may be introduced during deposition in order to control crystal orientation and the introduction of oxygen reduces oxygen deficiency in the MgO film [0025].

Kawakusu teaches a method for forming an MgO film onto a substrate of an AC type plasma display panel while keeping the oxygen partial pressure within a range of $1x10^{-5}$-$1x10^{-4}$ Torr ($1.33x10^{-3}$-$1.33x10^{-2}$ Pa) (Abstract).

Shiokawa teaches introducing a small amount of water vapor to the chamber during deposition of a protective layer for PDPs, such as MgO, in order to reduce impurities and reduce static electricity. Shiokawa also teaches that MgO has the property of absorbing water and by introducing larger amounts of water vapor may degrade its performances [0006]-[0007]. The partial pressure of water vapor during

MgO deposition should be 10 mPa or lower (1 x 10^-3 Pa or lower) (Abstract, [0013], [0017]).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to introduce water vapor during deposition of the MgO film as suggested by Shiokawa in the process of Shintani, wherein the water is introduced within a range of partial pressure that will not degrade the performance of the MgO film, in order to reduce impurities and static electricity while reducing oxygen deficiency as suggested by Okuyama. Also, it would have been obvious to maintain the oxygen partial pressure of Shintani within the specific range suggested by Kawakusu since this range would have reasonably been expected to be suitable for deposition of an MgO film on AC type plasma display panels.

Regarding Claim 27, Shintani teaches an apparatus for depositing an MgO film for manufacturing a plasma display panel, the apparatus comprising: a deposition room, a gas introducing means for introducing oxygen gas (nozzle), an exhausting means (pressure control valve), a partial pressure detecting means for detecting partial pressure of the oxygen gas (mass spectrometer), a vacuum degree detecting means (vacuum meter), and a controlling means for controlling the amount of oxygen gas introduced to said deposition room (mass flow controller) and for controlling the amount of exhausting gas (pressure computing unit) based on information from the partial pressure detecting means and vacuum degree detecting means [0002], [0004]-[0006]. It is inherent that the oxygen gas of Shintani suppresses oxygen deficiency in the MgO film as evidenced by [0025] of Okuyama et al (JP 2001-243886). It would have been

obvious to one of ordinary skill to incorporate other MFC's into the apparatus of Shintani to accomodate gases other than oxygen, such as those suggested by Shiokawa, in order to improve the quality of the MgO film and to independently detect the partial pressure of each gas since Shiokawa teaches maintaining the additional gas (water vapor) within a specific partial pressure range and the MFC of Shintani is suitable for maintaining a specific partial pressure of gas as shown with oxygen.

Thus, claims 21 and 27 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Shintani, Okuyama, Kawakusu, and Shiokawa.

4. Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (JP 11-080952) in view of Okuyama et al (JP 2001-243886), Kawakusu et al (JP 2000-277009), and Shiokawa et al (US 2003/0077972) as applied above and further in view of Nishimura et al (US 2004/0135506).

The above cited references do not teach that the another gas is carbon dioxide or carbon monoxide or their partial pressures.

Nishimura teaches a method of manufacturing a PDP having a MgO protective layer wherein carbon dioxide or water vapor is introduced in order to form a PDP having lower discharge voltage, more stable discharge, higher luminance, higher efficiency, and longer life. The amount of carbon dioxide being introduced is controlled to realize the desired effects (Abstract, [0037]-[0041]).

It would have been obvious to one of ordinary skill in the art at the time of invention to introduce carbon dioxide as suggested by Nishimura in the process of Shintani in order to form a PDP with lower discharge voltage and other desired effects.

It would have been obvious to introduce carbon dioxide at the partial pressure suggested by Shiokawa since it is suitable for water vapor and carbon dioxide may be used as an alternative to water vapor. Also, one of ordinary skill would have expected similar results using carbon monoxide since it has similar structure and properties to carbon dioxide.

Regarding Claim 27, it would have been obvious to one of ordinary skill to incorporate other MFC's into the apparatus of Shintani to accomodate gases other than oxygen, such as those suggested by Shiokawa or Nishimura, in order to improve the quality of the MgO film and to independently detect the partial pressure of each gas since Shiokawa teaches maintaining the additional gas (water vapor) within a specific partial pressure range and the MFC of Shintani is suitable for maintaining a specific partial pressure of gas as shown with oxygen.

Thus, claims 21 and 27 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Shintani, Okuyama, Kawakusu, Shiokawa, and Nishimura.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 21 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of copending Application No. 10/532672 in view of Shintani (JP 11-080952), Kawakusu et al (JP 2000-277009) and further in view of Furuya (JP 09-295894) or Shiokawa et al (US 2003/0077972) and Nishimura et al (US 2004/0135506). The '672 application teaches a method of manufacturing a PDP comprising every limitation of claim 21 except the metal oxide being magnesium oxide and the partial pressures of the oxygen gas and other gas (hydrogen, water vapor, carbon dioxide, carbon monoxide) being controlled within a certain range. Shintani teaches a method of manufacturing a PDP wherein an MgO film is formed as the metal oxide protecting layer. The partial pressure of the oxygen gas introduced is controlled within a certain range in order to obtain stable film performance over a long time (Abstract, [0002], [0004]). Kawakusu teaches a method for forming an MgO film onto a substrate of an AC type plasma display panel while keeping the oxygen partial pressure within a range of $1x10^{-5}$-$1x10^{-4}$ Torr ($1.33x10^{-3}$-$1.33x10^{-2}$ Pa) (Abstract). It would have been obvious to one of ordinary skill in the art to control the partial pressure of the oxygen gas introduced in the process of the '672 application as suggested by Shintani in order to obtain stable film performance over a long time,

wherein the range of Kawakusu may be used since this range would have reasonably been expected to be suitable for deposition of an MgO film on AC type plasma display panels. Furuya teaches a method for forming an MgO film onto a plasma display panel wherein hydrogen is introduced to the chamber in order to obtain an MgO film of high grade. Hydrogen may be introduced at a partial pressure of 1 x 10^-3 torr to 1 x 10^-4 torr (1.33x10^-2 Pa - 1.33x10^-1 Pa) (Abstract, [0005]). Shiokawa teaches introducing a small amount of water vapor to the chamber during deposition of a protective layer for PDPs, such as MgO, in order to reduce impurities and reduce static electricity and the partial pressure of water vapor during MgO deposition should be 10 mPa or lower (1 x 10^-3 Pa or lower) (Abstract, [0013], [0017]). Nishimura teaches a method of manufacturing a PDP having a MgO protective layer wherein carbon dioxide or water vapor is introduced in order to form a PDP having lower discharge voltage, more stable discharge, higher luminance, higher efficiency, and longer life (Abstract, [0037]-[0041]). Thus, it would have been obvious to independently control the partial pressures of the other gas (hydrogen, water vapor, carbon dioxide, carbon monoxide) in the '672 application in order to achieve the desired effects of obtaining a MgO film of high grade, reducing static electricity, and forming a PDP having higher luminance.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

5. Applicant's arguments filed 8/21/2009 have been fully considered but they are not persuasive. Applicant argues that the combination of Shintani, Okuyama, Kawakusu, and Furuya fails to disclose each element of claim 21. Specifically,

Okuyama does not disclose introducing two or more types of gases together in the deposition room. The examiner disagrees. Okuyama discloses that the gas introduced may be a mixed gas including at least one component selected from hydrogen, oxygen, etc [0025]. Thus, Okuyama discloses that two or more types of gases (mixed gas) may be introduced to the chamber and clearly suggests with the inclusion of the phrase "at least one" that hydrogen and oxygen may both be used. Further, it would have been obvious to the skilled person to use hydrogen and oxygen in the chamber in order to deposit an MgO film having desired properties since both impart different properties to the film, i.e. crystal orientation and reducing oxygen deficiency, respectively [0025]. Applicant further argues that Okuyama does not disclose controlling the partial pressure of each gas or controlling the amount of oxygen deficiency in the MgO film. The examiner agrees that Okuyama does not disclose controlling the partial pressures, however, Shintani discloses controlling a partial pressure of oxygen during the MgO depositon for stably obtaining a film over a long time (Abstract), Kawakusu discloses maintaining an oxygen partial pressure within the claimed range during MgO formation (Abstract), and Furuya discloses introducing hydrogen at a partial pressure within the claimed range during MgO formation in order to form a MgO film of high grade (Abstract, [0005]). Thus, taking the references collectively, it would have been obvious to the skilled person to incorporate other gases (such as hydrogen) at specific partial pressures in the process of Shintani in order to form a MgO film having desired properties since Okuyama and Furuya disclose advantages to introducing hydrogen during the process (i.e. crystal orientation and high grade film) and to control the oxygen

partial pressure in Shintani within the claimed range since the claimed range encompasses common values for the partial pressure of oxygen used in MgO deposition for plasma display panels as evidenced by Kawakusu. Further, controlling the partial pressure of oxygen as taught by Shintani inherently controls the amount of oxygen deficiency as evidenced by [0025] of Okuyama which states that the introduction of O2 reduces oxygen deficiency in the MgO film.

Applicant further argues that while Kawakusu discloses the oxygen partial pressure, they do not disclose the particular steps of claim 21, similarly to Okuyama. Applicant further argues that Furuya does not disclose or even mention oxygen deficiency or the particular steps of claim 21. These references have been addressed above. Please note that the test of obviousness is not an express suggestion of the claimed invention in any or all references, but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them (*In re Rosselet*, 146 USPQ 183).

Applicants further argue that there is no reasoning to modify the cited prior art such that the combination of Shintani, Okuyama, Kawakusu, and Furuya would have rendered claim 21 obvious. The examiner disagrees. Shintani discloses every limitation of claim 21 with the exception of the partial pressure range of oxygen and introducing a second gas from the claimed group within their respective partial pressure range. The claimed partial pressure range for oxygen encompasses values that were common for MgO deposition as evidenced by Kawakusu (Abstract). Okuyama discloses that a mixed gas may be introduced and may include hydrogen, oxygen, etc. to form an MgO film

having desired properties, wherein hydrogen may control crystal orientation and oxygen reduces oxygen deficiencies in the film [0025]. Furuya further discloses that introducing hydrogen, within the claimed partial pressure range, during MgO formation allows deposition of a high grade film [0005]. Thus, it would have been obvious to combine the prior art in order to form an MgO film having desired properties (i.e. crystal orientation, reduced oxygen deficiency, high grade film).

Applicant further argues that the cited prior art fails to disclose a gas introducing means for introducing the first gas and the second gas into the chamber and control means to control the partial pressure of each gas within their claimed ranges. The examiner disagrees. While Shintani only discloses a gas introducing means and control means for introducing oxygen at a certain partial pressure, Okuyama discloses that a mixed gas may be introduced, including hydrogen and oxygen [0025], and further discloses a gas introducing port for introducing the gases [0031]. Also, it would have been obvious to one of ordinary skill to incorporate other MFC's into the apparatus of Shintani to accomodate gases other than oxygen, such as those suggested by Okuyama and Furuya, in order to improve the quality of the MgO film and to independently detect the partial pressure of each gas since Furuya teaches maintaining the additional gas (hydrogen) within a specific partial pressure range and the MFC of Shintani is suitable for maintaining a specific partial pressure of gas as shown with oxygen.

Applicant argues that Shiokawa fails to disclose all the limitations of claim 21, as similarly argued for Okuyama, Kawakusu, and Furuya as discussed above. Shiokawa

discloses introducing water vapor to the chamber during MgO formation at a partial pressure within the claimed range in order to reduce impurities and reduce static electricity in PDP's (Abstract, [0013], [0017]). Thus, it would have been obvious to incorporate the water vapor into the MgO deposition process of Shintani in order to achieve the advantages of reducing impurities and reducing static electricity. It would have been obvious to the skilled person, taking the references collectively, that the addition of the different gases (i.e. oxygen, hydrogen, water, etc) impart different characteristics on the MgO film and to use these relationships to form an MgO film having desired characteristics.

Applicant argues that Nishimura does not disclose controlling the atmosphere of the deposition space for producing an MgO film as pointed out by the examiner. The examiner disagrees. Nishimura discloses that the step of introducing water vapor or carbon dioxide (adsorbing impurity step) can be performed during or before the sealing step. The MgO formation step (forming protective) is before the sealing step (Fig. 2, [0019], [0034], [0037]). Further, Shiokawa supports that water vapor may be introduced during the MgO formation step [0006], [0017].

Applicant argue that the double patenting rejection should be withdrawn since none of the cited references either alone or in combination discloses or renders obvious the steps of claim 21. The examiner disagrees for the reasons stated above with respect to each of the cited references.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Burkhart whose telephone number is (571)272-6647. The examiner can normally be reached on M-Th 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth Burkhart/
Examiner, Art Unit 1792

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1792